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Georgia Power and Gas Infrastructure Project (PGIP)

Performance Monitoring Plan

Through the period ending March 31, 2012

August 21, 2012

This document was produced for review by the United States Agency for International Development. It was prepared by Tetra Tech for the Georgia Power and Gas Infrastructure Project (PGIP).

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October 1, 2011 through March 31, 2012

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This report was prepared for the United States Agency for International Development, Contract No. AID-EDH-00-08-00027 – AID-114-TO-10-00003. USAID/Caucasus - Georgia Power and Gas Infrastructure Project, Infrastructure Oversight and Capacity Building

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Tetra Tech, Inc.

Implemented by:

In association with:

ACKNOWLEDGEMENTS

We acknowledge and thank [redacted] and [redacted] ([redacted] Tetra Tech) for preparing this report.

We express our appreciation to [redacted] for [redacted] careful and critical review of the statistics for the gas component.

We thank [redacted] (Georgia State Electrosystem, GSE) for her help with the statistics for Task 3A: GSE Capacity Building and Management Improvements. [redacted]

We thank [redacted] and [redacted] (Georgia Oil and Gas Corporation, GOGC) for help with the statistics.

We thank [redacted] and the folks at Energo Pro Georgia for the number of their customers in western Georgia.

We thank [redacted], Chief of Distribution Department, SOCAR; [redacted] SOCAR, Tbilisi office; and, [redacted] SOCAR Poti for the customer connection numbers for Abasha and Poti, respectively.

Lastly, we extend our appreciation and thanks to the team at USAID that guide and support us. [redacted]

The cover photo is of pipe received by the end of March 2012 at GOGC's pipe yard in Samtredia for the both the gas pipeline construction projects. Photo is courtesy of [redacted].

Contents

Acronyms and Abbreviations

A/E	Architecture and Engineering
CO	Contracting Officer
COP	Chief of Party
COTR	Contracting Officer's Technical Representative
CY	Calendar year, January through December
DNxxx	Pipe size, for example, DN700 for ~ 700 mm pipe
exp	Exp Energy Services
FIZ	Free Industrial Zone
FY	Fiscal Year, October through September
GGTC	Georgia Gas Transmission Company
GOG	Government of Georgia
GOGC	Georgian Oil and Gas Company
GSE	Georgia State Electrosystem
IPTT	Indicator Performance Tracking Table
km	Kilometer
kV	Kilovolt
kW	Kilowatt
kWh	Kilowatt hour
LN	Local national
LOE	Level of Effort
LOP	Life of the Project
LTTA	Long Term Technical Assistance
M&E	Monitoring and Evaluation
MAOP	Maximum Allowed Operating Pressure
MoE	Ministry of Energy
mm	Millimeter
mm3/d	thousands of cubic meters per day
MWH	Mega Watt-hour
O&M	Operation and Maintenance
PGIP	Power and Gas Infrastructure Program
PIRS	Performance Indicator Reference Sheets
PMP	Performance Monitoring Plan
POWER	Power Engineers, Inc.
QA/QC	Quality Assurance/Quality Control
SOCAR	State Oil Company of Azerbaijan
SOW	Statement of Work
TBD	To Be Determined
TO	Task Order
USAID	U.S. Agency for International Development
USG	U.S. Government
WO	Work Order

1 Introduction

In accordance with the contractual requirements, Tetra Tech has prepared a performance monitoring plan (PMP) to support project management and maximize project impact. The PMP will be developed using a results-based planning approach by a specialist, with the participation of the project management team and project stakeholders. The PMP was developed based on the project hypothesis and includes the project indicators, logical framework, and target values.

2 Approach

2.1 Reporting

The PMP is a monitoring and evaluation (M&E) tool that is used to manage and assess project performance, through the use of a set of indicators. The PMP provides information on each performance indicator: definition, unit of measurement, data source, method and approach of data collection and calculation, schedule and frequency, reporting, analysis, use, and person responsible. Performance Indicator Reference Sheets (PIRS) are completed for each indicator, which further elaborate the information in the PMP and guides the project staff in the M&E system implementation. PIRS include data descriptions, a plan for data acquisition, data quality issues, plan for data analysis, review and reporting, and critical assumptions. The PIRS are useful tools for ensuring that information can be replicated and ensuring reasonable quality.

In preparing this performance management plan, we examined the suggested indicators described by USAID and have incorporated the majority into the PMP; at the same time, we have added many others that should: (a) address the program element level indicators that inform USAID as to the extent to which the sector is advancing in line with its objectives; and, (b) activity level indicators, tracking progress and impact of the PGIP program. Thus, we have separated the proposed indicators into two categories:

- Program element level indicators: These are indicators that address the extent to which progress is being made in achieving USAID's stated objectives of energy security, promotion of energy exports and economic development.

- Activity level indicators: These indicators focus on each of the program's subcomponents (e.g., Senaki - Poti natural gas pipeline construction, Menji – Tskaltubo electric transmission line, and GSE smart grid) and identify indicators that can be used by USAID and the Tetra Tech team to monitor program progress and achievement.

In an effort to provide a logical structure, the organization of the indicators is provided, initially, in a top-down framework structure that shows the objectives, the program components and the proposed indicators. Then, a detailed table is provided that defines each indicator, the measures it uses, how the information will be collected or calculated, the expected information sources, its timeframe for collection, and the persons and the contractors responsible for its collection and dissemination.

Additionally, an Indicator Performance Tracking Table (IPTT) is included. This tool is used to track project achievement through expected and actual outputs, outcomes and impacts. Outcome and impact indicators will have two data points: baseline and end line. Output indicators will have four data points: baseline, Year 1, Year 2, Year 3, and end line. For each year, there are targets, actual and expected, that can be used to determine indicator achievement when comparing data point to data point, or over the course of the project. The attached exhibit shows the Indicator Performance Tracking Table. The IPTT is to be submitted biannually in response to the Task Order requirements.

Further, given the engineering aspects of this program, we will establish a monitoring and evaluation system that adopts a management-by-objectives system structure; it will take into account specific project objectives, project inputs and outputs, and end-of-project status while meeting all USAID reporting requirements. Routine project monitoring is an integral part of the project cycle, including progress reports and site visits from project field staff. Periodic evaluations will also be scheduled for the project cycle, and will provide information for measuring and accessing PGIP achievements and impacts. PGIP will use such M&E tools as field monitoring forms, organizational capacity assessment checklists, direct observations, key informant interviews and other participatory learning activities.

2.2 Revision History

Version 10 of this PMP, dated October 14, 2011, covered the period through the end of Federal fiscal year 2011 (that is, to September 30, 2011).

Version 12 of this PMP, dated December 21, 2011, includes a new, additional indicator, PE 12, “Number of customers, by customer categories, which receive access to electricity.” The additions appear on pages 15 and 33.

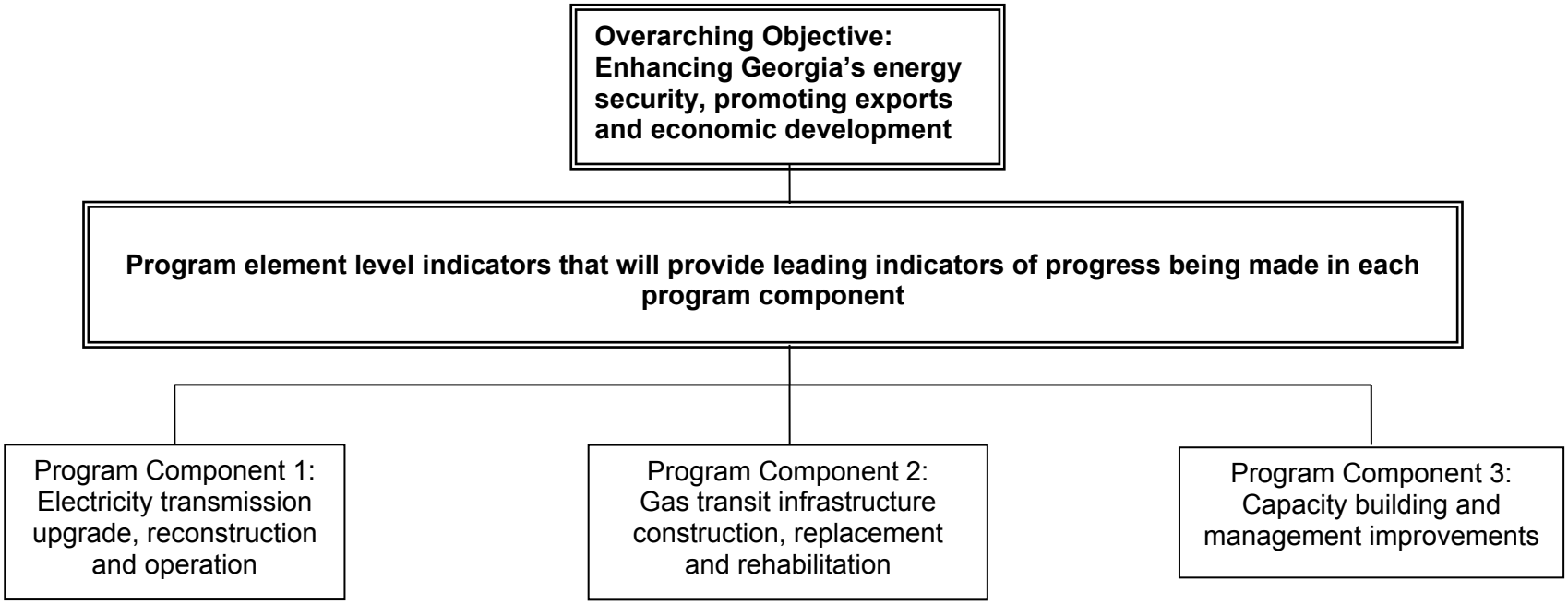
There is no version 13.

Version 14, also dated December 21, 2011 corrects typographic errors on page 33, in the right hand column.

Version 15 is for the time period of October 1, 2012 to March 30, 2012.

3 PERFORMANCE MONITORING PLAN ORGANIZATION

This section presents the organization of the plan and the definitions of the indicators.



Illustrative indicators:

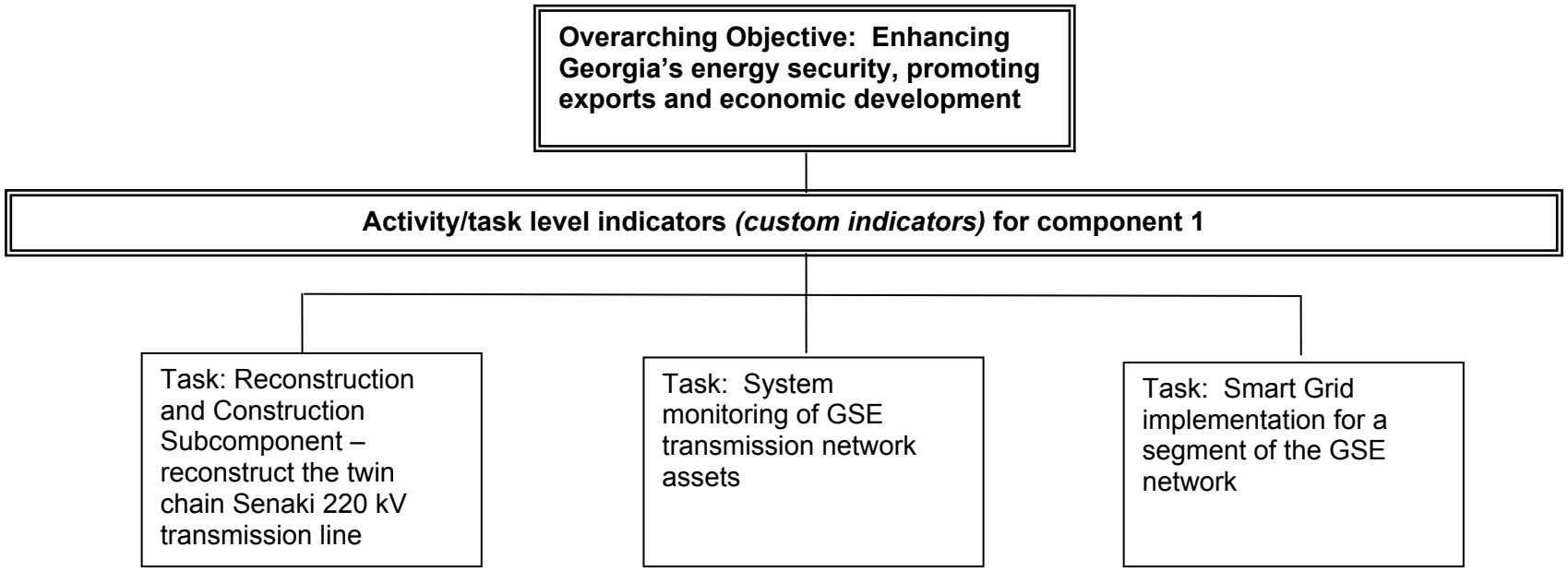
- Number of outages of the East-West power transmission network
- Average duration of forced outages due to backbone transmission system failure
- Amount of electricity transited across the new transmission line, due to backbone disruption
- Percentage of electricity transmission technical losses
- Amount of exported electricity

Illustrative indicators:

- Number of customers, by customer category, that receive access to natural gas as a result of program activities and also due to general GOGC and gas distribution company efforts to expand network connections
- Percent of natural gas technical losses
- Amount of investment leveraged from providing natural gas to the FIZ.

Illustrative indicators:

- Number of persons participating in project funded workforce development programs (disaggregated by sex and age)
- Number of people gaining employment or better employment as a result of participation in program (disaggregated by sex, age, new vs. improved employment)
- Extent of contributions performed by counterparts GSE and GOGC (e.g., for each activity in the work plan, the number of activities and % of effort where GSE and GOGC are able to lead with limited oversight).



Illustrative indicators:

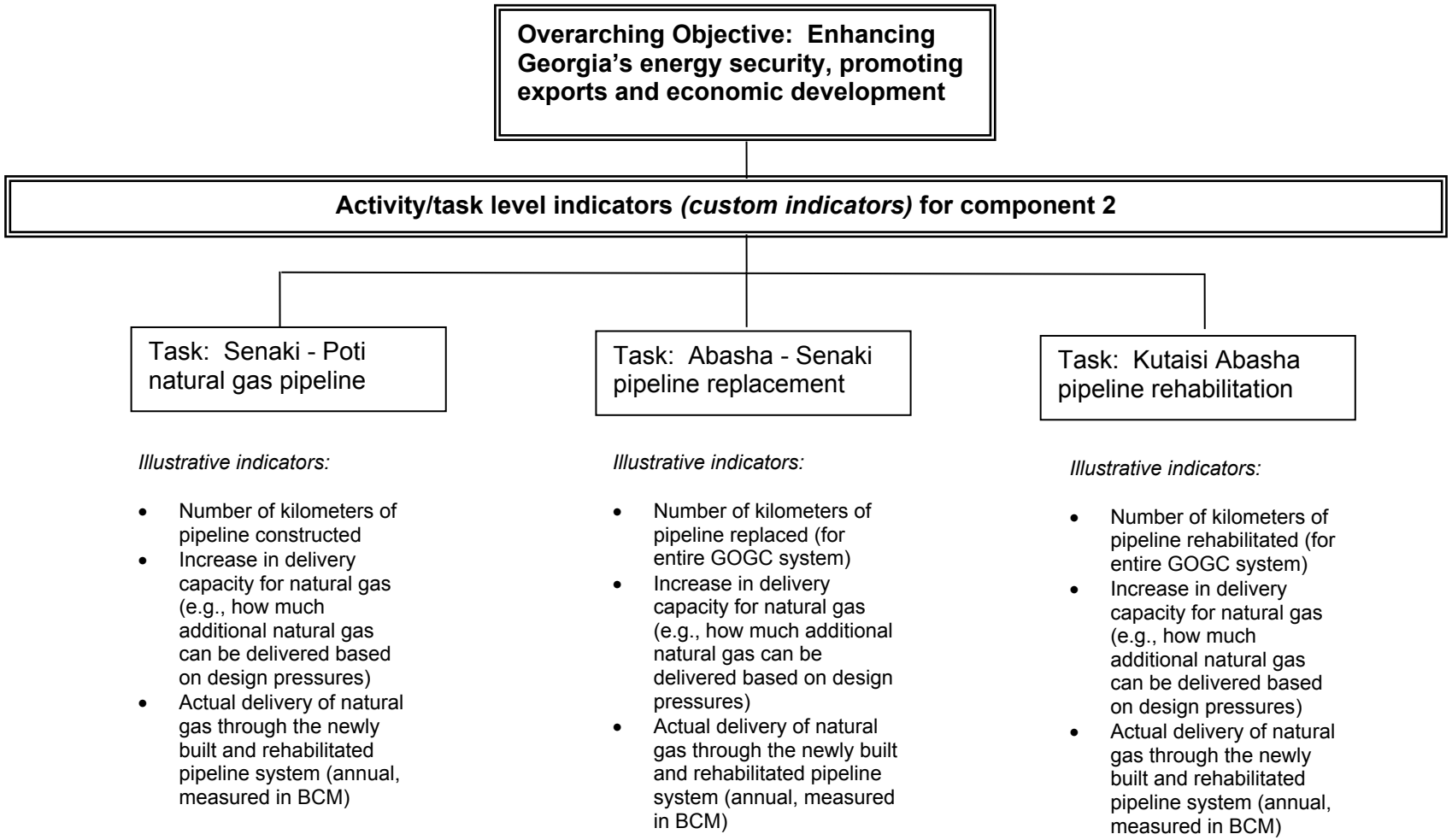
- Number of circuit kilometers constructed
- Amount of electricity carried through new transmission line (measured in kWh)
- Amount of investment gained, or made, by GSE itself, to expand network to the Khorga (Mukhuri) Substation

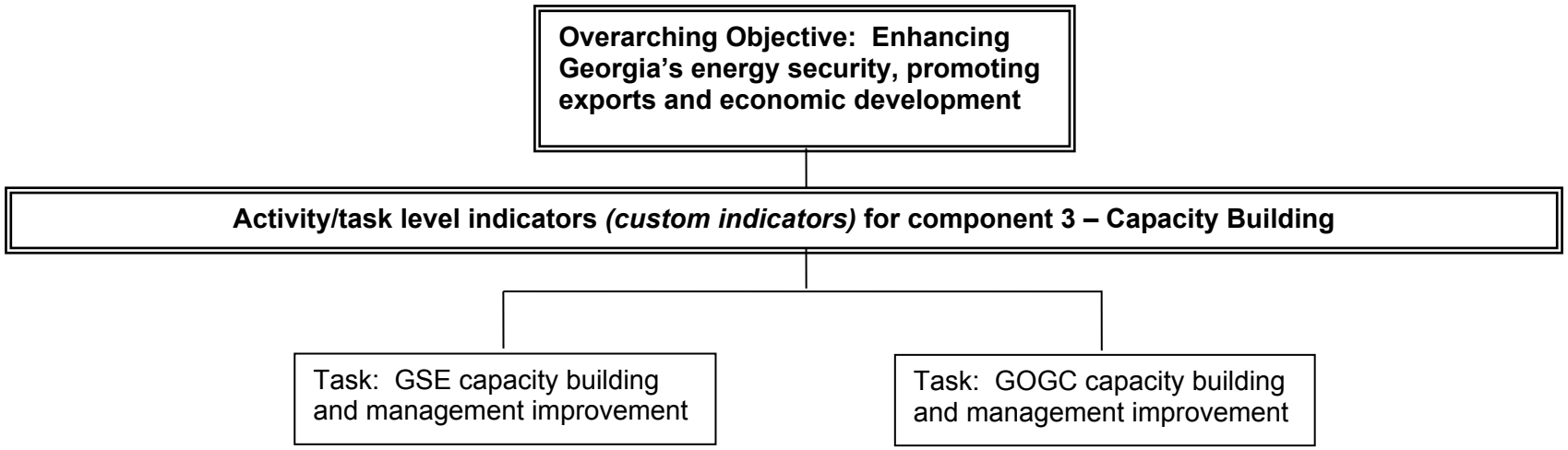
Illustrative indicators:

- Number of GSE owned high voltage transformers failing and being forced out of service
- Amount of emergency maintenance funds spent due to unplanned transformer failures
- Number of customers affected by backbone transmission disruption and transformer failures (by category of customer and type of failure)

Illustrative indicators:

- Percentage of transmission system operating under modern computerized (automated) control systems


Overarching Objective: Enhancing Georgia's energy security, promoting exports and economic development
Activity/task level indicators (custom indicators) for component 2
Task: Senaki - Poti natural gas pipeline
Illustrative indicators:
• Number of kilometers of pipeline constructed
• Increase in delivery capacity for natural gas (e.g., how much additional natural gas can be delivered based on design pressures)
• Actual delivery of natural gas through the newly built and rehabilitated pipeline system (annual, measured in BCM)
Task: Abasha - Senaki pipeline replacement
Illustrative indicators:
• Number of kilometers of pipeline replaced (for entire GOGC system)
• Increase in delivery capacity for natural gas (e.g., how much additional natural gas can be delivered based on design pressures)
• Actual delivery of natural gas through the newly built and rehabilitated pipeline system (annual, measured in BCM)
Task: Kutaisi Abasha pipeline rehabilitation
Illustrative indicators:
• Number of kilometers of pipeline rehabilitated (for entire GOGC system)
• Increase in delivery capacity for natural gas (e.g., how much additional natural gas can be delivered based on design pressures)
• Actual delivery of natural gas through the newly built and rehabilitated pipeline system (annual, measured in BCM)



Illustrative indicators:

- Percentage of work effort for network construction and expansion GSE staff are able to perform in-house, with only minor oversight and guidance
- Number of GSE staff trained by program (including gender and age)
- Number of loss time accidents in the GSE organization
- Number of loss time accidents in contractor organizations

Illustrative indicators:

- Percentage of work effort for network rehabilitation and construction able to be performed in house, with only minor oversight and guidance
- Number of GOGC staff trained by program (including gender and age)
- Number of loss time accidents in the GOGC organization
- Number of loss time accidents in contractor organizations

4 PERFORMANCE MONITORING PLAN DEFINITIONS

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
4.1 Program Element Level Indicators							
4.1.1 **Enhancing Georgia's Energy Security, Promotion of Exports and Economic Development – Program's Electricity Component**							
Indicator PE1: Number of outages of the East-West power transmission network	**Definition**: Unplanned outages of the East-West 500 kV power transmission network that lead to noticeable loss of electricity supply to consumers. **Measure; and, Unit of Measure:** Number of outages as recorded.	GSE Dispatch	Primary data collection	Biannual	DCOP	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
Indicator PE2: Average duration of forced outages due to backbone transmission system failure	**Definition:** The duration in minutes of unplanned outages of the East-West 500 kV power transmission network that lead to noticeable loss of electricity supply to consumers, expressed as both the total amount of duration over the course of a measurement period, as well as the average (indicator 1.2 total divided by indicator 1.1 for quantity). **Measure; and, Units of Measure:** Total duration of outages and average over the course of the measurement period; Time.	GSE Dispatch	Primary data collection	Biannual	DCOP	Biannual	COP & DCOP
Indicator PE3: Amount of electricity transited across the new transmission line, due to backbone disruption	**Definition:** The amount of electricity that is transited across the proposed Senaki double circuit 220 kV line due to the planned and unplanned outage of the East-West 500 kV system. **Measure; and, Unit of Measure:** Energy**;** MWH.	GSE, verified by metering data at both the Menji and Tskaltubo Substations	Primary data collection	Biannual	DCOP	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
Indicator PE4: Percent of electricity lost in the transmission network	**Definition:** The amount of electricity that comprises technical losses in electricity transmission network. **Measure; and, Unit of Measure:** Percentage based on the difference between the amount of electricity entering and exiting the GSE system, divided by the amount of electricity entering the GSE system; Percentage.	GSE Dispatch	Primary data collection	Biannual	DCOP	Biannual	COP & DCOP
Indicator PE5: Amount of exported electricity	**Definition:** The amount of electricity that is generated within Georgia and exported from the country. **Measure; and, Unit of measure:** Energy, and power (non-coincident peak export amount)**;** MWH and MW (non-coincident peak export amount).	GSE Dispatch	Primary data collection	Biannual	DCOP	Biannual	COP & DCOP
Indicator PE 12 Number of customers, by customer categories, which receive access to electricity	**Definition:** The number customers in Samegrelo, Guria, and Imereti, disaggregated by customer categories. **Measure**; and Unit of Measure: The number customers registered in the customer billing system of the local electric distribution company, disaggregated by customer categories; Counts.	EnergoPro Georgia	Primary data collection	Biannual	DCOP	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
4.1.2 **Enhancing Georgia's Energy Security, Promotion of Exports and Economic Development – Program's Natural Gas Component**							
Indicator PE6: Number of customers, by customer category, that receive access to natural gas	**Definition:** The quantity of new customer connections to the natural gas distribution system as a result of both the program activities, as well as GOGC efforts to expand the network. **Measure; and, Unit of Measure:** Number of customers and customer type (e.g., budget, domestic, commercial) receiving access to natural gas supply specified separately for both the program funded activities and other GOGC efforts or gas industry efforts (e.g., Tbilgazi) to expand network connections; Counts.	GOGC and gas distribution companies	Primary data collection	Biannual	DCOP with support of Ministry of Energy and GOGC as required	Biannual	COP & DCOP
Indicator PE7: Percent of natural gas technical losses	**Definition:** The amount of natural gas that comprises technical losses in the gas transmission network. **Measure; and, Unit of Measure:** Percentage based on the difference between the amount of natural gas entering and exiting the GOGC system, divided by the amount of natural gas entering the GOGC system; Percentage.	GOGC	Primary data collection	Biannual	DCOP	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
Indicator PE8: Amount of investment leveraged from providing natural gas to the FIZ	**Definition:** this is the amount of private and foreign investment attracted into the FIZ that is dependent on the provision of natural gas supply. **Measure; and, Unit of Measure:** GEL and USD equivalent of actual investments, as well as projection of investment commitments; GEL and USD equivalent.	Ministry of Economy, with assistance from the Ministry of Energy and from GOGC	Primary data collection	Biannual	Tetra Tech team economist, or senior energy advisor	Biannual	COP & DCOP
4.1.3 **Enhancing Georgia's Energy Security, Promotion of Exports and Economic Development – Program's Capacity Building and Management Improvement Component**							
Indicator PE9: Number of persons participating in USG-funded workforce development programs (disaggregated by sex and age)	**Definition:** Number of persons participating in USG - funded workforce development programs, including technical programs and training. Persons are counted only if they have completed the full complement of agreed - upon training. **Measure; and, Unit of Measure:** Number of persons, disaggregated by sex and age, with the type of training also indicated.	Project team	Project records	Biannual	COP	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
Indicator PE10: Number of people gaining employment or better employment as a result of program (disaggregated by sex, age, new vs. improved employment)	**Definition:** Number of people gaining employment or better employment as a result of program activities. In addition to employment as a result of direct program activities (e.g., construction, design) it would include the indirect employment effects such as contributing from the FIZ. "Better employment" is based on the participant's perception of whether the employment is better (It could be better because it is closer to home, has better pay, a better schedule, etc.). **Measure; and, Unit of Measure:** Number of people employed, disaggregated by sex, age, new employment.	Implementing partners and contractors	Primary data collection from each participating contractor and partners	Quarterly	Tetra Tech team economist	Biannual	COP & DCOP
Indicator PE11: Extent of contributions performed by counterparts GSE and GOGC (e.g., for each activity in the work plan, the number of activities and % of effort where GSE and GOGC are able to lead with limited oversight)	**Definition:** For both GSE and GOGC, this is the percent of the program activities able to be conducted or managed in house versus being reliant on technical assistance from the project team. **Measure; and, Units of Measure:** Percent of level of effort for project activities included in the work plan able to be undertaken by GOGC and GSE independently, with only limited oversight.	Internal to the project team	Evaluation of the capabilities by members of the Tetra Tech team, POWER and TROW	Annual	COP	Annual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
4.2 Component 1 Electric: Activity / Task level indicators (Custom indicators - Outcomes)							
4.2.1 **Task 1A: Reconstruction and Construction Subcomponent – Reconstruct the Twin Chain Senaki 220 kV Transmission Line**							
Indicator 1.1: Number of circuit kilometers constructed	**Definition:** The actual circuit length of transmission constructed as a result of program activities. **Measure; and Unit of Measure:** Distance; kilometers.	Internal to the project team	Taken from project records	Monthly	POWER	Biannual	COP & DCOP
Indicator 1.2: amount of electricity carried through new transmission line	**Definition:** This measures the amount of electricity carried through the new line. **Measure; and, Unit of Measure:** Energy; MWH on a monthly basis.	GSE Dispatch	Primary research	Monthly	Tetra Tech analyst	Biannual	COP & DCOP
Indicator 1.3: Amount of investment gained by GSE, or made by GSE itself, to expand network to the Khorga (Mukhuri) Substation	**Definition:** To complete the Khorga (Mukhuri) Substation, it is necessary for GSE to locate investment funds or provide financing itself. This indicator measures the amount of financing GSE is able to mobilize. **Measure; and, Units of Measure:** Funds raised by GSE (either in bank or promised in writing; GEL and USD equivalent.	GSE General Director	Primary data collection	Biannual	COP	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
4.2.2 **Task 1B: System Monitoring of GSE Transmission Network Assets**							
Indicator 1.4: Number of GSE owned high voltage transformers failing and being forced out of service	**Definition:** This indicator examines the extent to which high voltage transformers are failing unexpectedly on the GSE network and the impact of such failures in terms of outage duration. **Measure; and, Units of Measure:** Number of failures and duration of outage in an appropriate unit of measure (e.g., hours, days); Counts and Time.	GSE Technical Department	Primary data collection	Biannual	Tetra Tech analyst	Biannual	COP & DCOP
Indicator 1.5: Amount of emergency maintenance funds spent due to unplanned transformer failures	**Definition:** Following on to indicator 1.4, this measures the amount of money GSE is required to spend for emergency maintenance due to failure of transformers on the network. It is intended to show the impact on emergency maintenance from introduction of the new monitoring equipment. **Measure; and Units of Measure:** Money**;** GEL and USD equivalent.	GSE Technical Department	Primary data collection	Quarterly	Tetra Tech analyst	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
Indicator 1.6: Number of customers affected by backbone transmission disruption and transformer failures (by category of customer and type of failure)	**Definition:** Following on to indicator 1.4, this measures the impact on customers resulting from the unplanned failure of high voltage transformer equipment (the target of the monitoring program). **Measure; and Units of Measure:** Number of customers affected by customer type and estimated duration of outage; Counts and Time.	GSE Technical Department	Primary data collection	Quarterly	Tetra Tech analyst	Biannual	COP & DCOP
4.2.3 **Task 1C: Smart Grid Implementation for a Segment of the GSE Network**							
Indicator 1.7: Percent of transmission system operating under modern computerized (automated) control systems	**Definition:** This indicator will assess the extent of the network that is covered by modern (e.g., non-manual) equipment for transformer monitoring, automated protection, SCADA. **Measure; and, Units of Measure:** Percentage estimate of the amount of electricity flow covered by modern equipment, specified by voltage level (220kv, 500kV) (alternatively, it may be more useful to examine this indicator on an asset basis – e.g., the number of automatic relays at substations, the penetration of SCADA in the GSE network); Percentage; or Counts.	GSE Dispatch and Technical Departments	Primary data collection, engineering estimates	Biannual	Tetra Tech DCOP	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
4.3 Component 2 Gas: Activity / Task Level Indicators (Custom Indicators - Outcomes)							
4.3.1 **Task 2A: Senaki - Poti Natural Gas Pipeline Extension**							
Indicator 2.1: Number of kilometers of pipeline constructed	**Definition:** This indicator assesses the amount of new pipeline constructed, both as part of this program and as part of GOGC's efforts elsewhere. **Measure; and, Unit of Measure:** Length of pipeline, by size and flow capacity; kilometers, mm or DNxxx, and cubic meters of flow per day at maximum allowable operating pressure (MAOP) .	GOGC	Primary data collection	Monthly	Tetra Tech experts and analyst	Biannual	COP & DCOP
Indicator 2.2: increase in delivery capacity for natural gas (e.g., how much additional natural gas can be delivered based on design pressures)	**Definition:** This indicator assesses the *increase* in *capacity* on the natural gas system due to new pipeline construction. **Measure, and Unit of measure:** The difference in the capacity of the rehabilitated gas pipeline before and after the pipeline rehabilitation; BCM annually at MAOP. Since the pipeline was out of service the "before" is zero; million normal cubic meters per day.	GOGC	Primary data collection	Quarterly	Tetra Tech experts and analyst	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
Indicator 2.3: Actual delivery of natural gas through the newly built and rehabilitated pipeline system (annual, measured in BCM)	**Definition:** This indicator assesses the increase in the actual amount of natural gas being delivered through the natural gas system as a result of new pipeline construction. **Measure; and, Unit of Measure:** As described above; million normal cubic meters per day.	GOGC	Primary data collection	Quarterly	Tetra Tech expert and analyst	Biannual	COP & DCOP
4.3.2 **Task 2B: Abasha - Senaki Pipeline Replacement**							
Indicator 2.4: Number of kilometers of pipeline replaced (for entire GOGC system)	**Definition:** This indicator assesses the amount of pipeline replaced, both as part of this program and as part of GOGC's efforts elsewhere. **Units; and, Units of Measure:** Length of pipeline, by size (DNxxx) and flow capacity; kilometers, size (DNxxx), and million normal cubic meters per day at MAOP.	GOGC	Primary data collection	Monthly	Tetra Tech expert and analyst	Biannual	COP & DCOP
Indicator 2.5: Increase in delivery capacity for natural gas (e.g., how much additional natural gas can be delivered based on design pressures)	**Definition:** This indicator assesses the *increase* in *capacity* on the natural gas system due to pipeline replacement. **Measure; and, Unit of Measure:** The difference in the capacity of the rehabilitated gas pipeline before and after the pipeline rehabilitation; million normal cubic meters per day.	GOGC	Primary data collection	Quarterly	Tetra Tech exert and analyst	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
Indicator 2.6: Actual delivery of natural gas through the newly built and rehabilitated pipeline system (annual, measured in BCM)	**Definition:** This indicator assesses the *increase* in the *actual* amount of natural gas being delivered through the natural gas system as a result of pipeline replacement. **Measure; and, Unit of Measure:** As described above; million normal cubic meters per day.	GOGC	Primary data collection	Quarterly	Tetra Tech exert and analyst	Biannual	COP & DCOP
4.3.3 **Task 2C: Kutaisi - Abasha Pipeline Rehabilitation**							
Indicator 2.7: Number of kilometers of pipeline rehabilitated (for entire GOGC system)	**Definition:** This indicator assesses the amount of pipeline rehabilitated, both as part of this program and as part of GOGC's efforts elsewhere. **Measure; and, Unit of Measure:** Distance, size, and capacity; kilometers, DNxxx, and million normal cubic meters per day at MAOP.	GOGC	Primary data collection	Monthly	Tetra Tech exert and analyst	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
Indicator 2.8: Increase in delivery capacity for natural gas (e.g., how much additional natural gas can be delivered based on design pressures)	**Definition:** This indicator assesses the *increase* in *capacity* on the natural gas system due to new pipeline construction. **Measure; and, Unit of Measure:** The difference in the capacity of the rehabilitated gas pipeline before and after the pipeline rehabilitation; million normal cubic meters at MAOP.	GOGC	Primary data collection	Quarterly	Tetra Tech exert and analyst	Biannual	COP & DCOP
Indicator 2.9: Actual delivery of natural gas through the newly built and rehabilitated pipeline system (annual, measured in BCM)	**Definition:** This indicator assesses the *increase* in the *actual* amount of natural gas being delivered through the natural gas system as a result of pipeline rehabilitation. **Measure; and, Unit of Measure:** As described above; million normal cubic meters per day.	GOGC	Primary data collection	Quarterly	Tetra Tech exert and analyst	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
4.4 Capacity Building and Management Improvements: Activity / Task Level Indicators (Custom Indicators - Outcomes)							
4.4.1 **Task 3A: GSE Capacity Building and Management Improvement**							
Indicator 3.1: Amount of effort for network construction and expansion GSE staff are able to perform in-house, with only minor oversight and guidance	**Definition:** This indicator assesses the improvement in capabilities at GSE over the duration of the program's period of performance. It is a subjective estimate to be performed by the project team. **Measure; and, Unit of Measure:** Maturity model rankings (0-5) for extent of key capabilities needed within the GSE organization; Ranking.	Project work plan supplemented with primary research at GSE to review capabilities	Analysis of the work plan and level of effort, using a maturity model approach to determine the extent to which GSE is able to perform satisfactorily on each program activity	Annual	DCOP, supported by Tetra Tech COP	Annual	COP & DCOP
Indicator 3.2: Number of GSE staff trained by program (including gender and age)	**Definition:** This indicator will track the number of persons trained both inside of GSE and in other participating organizations (e.g., contractors) and the type of training provided. **Measure; and, Unit of Measure:** Number of persons trained by gender and age, and days of training provided; Counts.	Internal project team	Project records	Quarterly	Tetra Tech analyst	Biannual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
Indicator 3.3: Number of lost time accidents in the GSE organization	**Definition:** This indicator measures the performance of GSE on the basis of loss time accidents (using GSE's definition of what qualifies as a lost time accident). **Measure; and, Unit of Measure:** Number of accidents, expressed separately for severity; Counts.	GSE Human Resources and Technical Departments	Primary data collection	Biannual	Tetra Tech [redacted]	Biannual	COP & DCOP
Indicator 3.4: Number of lost time accidents in contractor organizations	**Definition:** This indicator measures the performance of GSE's contractors on the basis of lost time accidents (using GSE's definition of what qualifies as a lost time accident) **Measure; and, Unit of Measure:** Number of accidents, expressed separately for severity; Counts.	GSE Human Resources and Technical Departments, and Contractors	Primary data collection	Biannual	DCOP/ Tt analyst [redacted]	Biannual	COP & DCOP
4.4.2 **Task 3B: GOGC Capacity Building and Management Improvement**							
Indicator 3.5: Percentage of work effort for network rehabilitation and construction able to be performed in house, with only minor oversight and guidance	**Definition:** This indicator assesses the improvement in capabilities at GOGC over the duration of the program's period of performance. It is a subjective estimate to be performed by the project team. **Measure; and, Unit of Measure:** Maturity model rankings (0-5) for extent of key capabilities needed within the GOGC organization; Ranking.	Project work plan supplemented with primary research at GOGC to review capabilities	Analysis of the work plan and level of effort, using a maturity model approach to determine the extent to which GOGC is able to perform satisfactorily on each program activity	Annual	DCOP	Annual	COP & DCOP

PERFORMANCE INDICATOR	INDICATOR DEFINITION AND UNIT OF MEASUREMENT	DATA SOURCE	METHOD OR APPROACH OF DATA COLLECTION OR CALCULATION	DATA ACQUISITION		ANALYSIS, USE AND REPORTING	
				SCHEDULE OR FREQUENCY	BY WHOM (PERSON/ TEAM)	SCHEDULE OR FREQUENCY	BY WHOM (PERSON / TEAM)
Indicator 3.6: Number of GOGC staff trained by program (including gender and age)	**Definition:** This indicator will track the number of persons trained both inside of GOGC and in other participating organizations (e.g., contractors) and the type of training provided. **Measure; and, Unit of measure:** Number of persons trained by gender and age, and days of training provided; Count.	Internal project team	Project records	Quarterly	Tetra Tech analyst,	Biannual	COP & DCOP
Indicator 3.7: Number of lost time accidents in the GOGC organization	**Definition:** This indicator measures the performance of GOGC on the basis of lost time accidents (using GOGC's definition of what qualifies as a lost time accident). **Measure; and, Unit of measure:** Number of accidents, expressed separately based on severity; Counts	GOGC Human Resources and Technical Departments	Primary data collection	Biannual	DCOP and Tetra Tech analyst [redacted]	Biannual	COP & DCOP
Indicator 3.8: Number of loss time accidents in contractor organizations	**Definition:** This indicator measures the performance of GOGC's contractors on the basis of lost time accidents (using GOGC's definition of what qualifies as a lost time accident). **Measure; and, Unit of Measure:** Number of accidents, expressed separately based on severity; Counts.	GOGC Human Resources and Technical Departments, and Contractors	Primary data collection	Biannual	DCOP and Tetra Tech analyst [redacted]	Biannual	COP & DCOP

5 Indicator Performance Tracking Table

The following provides the indicator performance tracking table, with preliminary targets now under identification. Although we are attempting to align with the US government's fiscal year (FY) calendar, for some indicators it may not be feasible to collect the baseline according to a fiscal year (as historic data may not be readily available by month or quarter and thus, does not lend itself to a fiscal year calculation). In such instances, calendar year (CY) will be used but noted accordingly.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
5.1 Program Element Level Indicators					
5.1.1 **Enhancing Georgia's Energy Security, Promotion of exports and Economic Development – Program's Electricity Component**					
Indicator PE1: Number of outages of the East-West power transmission network	**During 2009:** **Engurhesi** - was disconnected 4 times. 3 disconnections with request and 1 emergency disconnection **Imereti transmission line** – 20 disconnections; 12 with request and 8 emergency **Egrisi transmission line** – 2 disconnections with request In total 26 disconnections	There were partial blackouts of the transmission system in July and August 2010 due to the emergency outages of the 500 kV Imereti line and the 500 kV Kartli-2 power transmission line. (GSE Annual Report for 2010, page 44.)	There were partial blackouts of the transmission system in July 2011 due to the emergency outages of the 500 kV Imereti line and the 500 kV Kartli-2 power transmission line. (GSE Annual Report for 2011, page 38.)	There were no outages in this period.	Zero, that is, no outages. After completion of the twin chain Senaki 220kv transmission line, number of outages is not anticipated to decrease; however, the amount of energy (MWH) moving from western Georgia (in particular, Enguri HPP and the Kavkasioni 500 KV line from Russia) to customers in eastern Georgia is expected to increase and fewer customers will be disconnected if and when there is an outage of the GSE transmission system.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator PE2: Average duration of forced outages due to backbone transmission system failure	**Duration of Disconnections** **Engurhesi** – disconnections with request – 8 hours and 40 minutes. Emergency disconnection - 5 minutes **Imereti transmission line** - disconnections with request – 81 hours and 14 minutes. Emergency disconnections – 85 hours and 30 minutes **Egrisi transmission line** –disconnections with request 2 hours and 7 minutes	500kV Imereti transmission line Emergency disconnection – 1 hour	The system operated in an automatic mode and the circuit breakers immediately reclosed after the fault. The interruption was momentary.	Zero outage duration since there were no outages	After completion of the twin chain Senaki 220kv transmission line, duration of forced outages is not anticipated to decrease; however, the amount of energy (MWH) moving from western Georgia (in particular, Enguri HPP and the Kavkasioni 500 KV line from Russia) to customers in eastern Georgia is expected to increase.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator PE3: Amount of electricity transited across the new transmission line, due to backbone disruption	The GIPTP line is not in place yet	The GIPTP line is not in place yet	The GIPTP line is not in place yet	The GIPTP line is not in place yet	For loss of the backbone 500 kV Imereti line, it is expected that the new Senaki 1 and 2 lines combined would pick up about 325 MWH per hour (=125 + 200). The limit factors will be the exits from the Tskaltubo substation to the Kutaisi area (at most 125 MVA 220 / 110 kV) and 200 MW on the 220 kV line from Tskaltubo to the Zestaponi 500 / 220 kV Substation.
Indicator PE4: Percentage of electricity losses in the transmission network	1.7 % From GSE Annual Report for 2011, page 21; for year ending 12/31/2009.	1.7 % From GSE Annual Report for 2011, page 21; for year ending 12/31/2010.	1.9 % From GSE Annual Report for 2011, page 21; for year ending 12/31/2011	Not available until the end of the calendar year.	2 % or less.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator PE5: Amount of exported electricity	Turkey is the most important strategic partner of Georgia for exporting electricity. In 2009 Georgia has exported to: **Turkey** – 184.345 million KWh **Russia** - 525.817 million KWh **Azerbaijan** – 21.465 million KWh **Armenia** – 19.801 million KWh	**Turkey** – 303 366 million KWh **Russia** – 1,117,123 Billion KWh **Azerbaijan** – 14 344 million KWh **Armenia** – 89 447 million KWh	**Turkey** – 218, 622 million KWh **Russia** – 588. 576 million KWh **Azerbaijan** – 5.923 million KWh **Armenia** – 117.474 million KWh	**Fourth Quarter of CY 2011** **Turkey** – 37.162 million KWh **Russia** – 14.119 million KWh **Azerbaijan** – 0.00 million KWh **Armenia** – 0.00 million KWh **First Quarter of CY 2012** There were no electricity exports during the first quarter of 2012.	GOG is intensively working on potential increase of electricity export. Transmission system RELIABILITY is one of the hindering factors for achieving better results. As it is currently organized, Turkey is performing electricity import from Russia in larger amounts and with significantly higher price. Twin chain transmission line Senaki will enhance system reliability and as a result at export to Turkey is anticipated to be increased at least 15-20% Increase of export to other countries is subject of negotiations.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator PE 12 Number of customers, by customer categories, which receive access to electricity	EnergoPro, the electric distribution company, reports: 275,371 residential customers (about 744,000 persons) receiving electricity in Samegrelo, Imereti, and Guria. 14,202 commercial customers (budgets and non-residential). 137 large commercial customers.	EnergoPro, the electric distribution company, reports: 277,700 residential customers (about 750,000 persons) receiving electricity in Samegrelo, Imereti, and Guria. 14,468 commercial customers (budgets and non-residential). 232 large commercial customers.	EnergoPro, the electric distribution company reports: 302,060 residential customers (about 816,000 persons) receiving electricity in Samegrelo, Imereti, and Guria. 15,701 commercial customers (budgets and non-residential). 307 large commercial customers.	EnergoPro, the electric distribution company reports: 403,553 residential customers (about 1,000 000 persons) receiving electricity in Samegrelo, Imereti, and Guria. 17, 211 commercial customers (budgets and non-residential). 500 large commercial customers.	Tetra Tech anticipates the following increases. Increase of fourteen percent for residential customers. Increase of ten percent for commercial customers. Increase of thirty percent for large commercial customers.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
5.1.2 **Enhancing Georgia's Energy Security, Promotion of Exports and Economic Development – Program's Natural Gas Component**					
Indicator PE6: Number of customers, by customer category, that receive access to natural gas	SOCAR, the distribution company in Poti will organize distribution system extension and customer connection related activities. Number of annually connected customers, depends initiative of inhabitants. They have to perform connection fee payment. Based on experience and prognoses, it is expected at least 15% of customers per annum to be connected to the network. Number of customers who will gain natural gas supply is following: - Poti – 15 759 residential 195 commercial - Patara Poti – 283 residential 23 commercial - Sachochuo – 91 residential 1 commercial - Chaladidi – 524 residential 19 commercial - Sakorkio – 12 residential - Sagvichio – 151 redisential 4 commercial - Mukhuri – 765 residential 35 commercial - Siriachkhoni – 104 residential 2 commercial - Golaskuri – 84 residential	This information will be collected in the next version of this Report.	This information will be collected in the next version of this Report.	The statistics are presented in the tables of Annex 1.	SOCAR Poti forecasts an increase 20 % of customers per year.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator PE7: Percentage of natural gas technical losses	In 2009 Georgia has consumed 1.188 billion cm of natural gas. Transit through GOGC system equaled to 1.628 billion cm. Technical losses for 2009 were 0.72 %	In 2010 Georgia has consumed 1.12 billion cm of natural gas. Transit through GOGC system equaled to 1.44 billion cm. Technical losses for 2010 were 0.40 %	In 2011 Georgia has consumed 1.78 billion cm of natural gas. Transit through GOGC system equaled to 1.609 billion cm. Technical losses for 2011 were 0.39 %	GOGC was asked orally several times to provide this information and was asked via email message on August 8, 2012 to provide this number for the time period October 1, 2011 through March 31, 2012. So far GOGC has not responded.	Standard percentage of technical losses that will occur in newly built and rehabilitated network will equal to 0.2%. Overall technical losses for GOGC system is anticipated to go down to at least 0.3%.
Indicator PE8: Amount of investment leveraged from providing natural gas to the FIZ	Zero, there are no customers at the Poti FIZ.	Zero, there are no customers at the Poti FIZ.	Zero, there are no customers at the Poti FIZ.	Zero, there are no customers at the Poti FIZ.	TBD – Subject to investor's strategic aims

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
5.1.3 **Enhancing Georgia's Energy Security, Promotion of Exports and Economic Development – Program's Capacity Building and Management Improvement Component**					
Indicator PE9: Number of persons participating in USG - funded workforce development programs (disaggregated by sex and age)		Zero	Zero	GSE: 12 men and 3 women were trained on CAPE software GOGC: Pipeline Integrity Management Workshop; 14 people total, 13 men and 1 woman.	Subject to construction contractor bid submission results
Indicator PE10: Number of people gaining employment or better employment *as a result of program* (disaggregated by sex, age, new vs. improved employment)		Sakhidromsheni employed about 50 persons on average during construction at the site; all men.	Sakhidromsheni employed about 50 persons on average during construction at the site; all men.	There was effectively zero persons from Sakhidromsheni on construction works of Senaki-Poti gas pipeline. The line became operational in the fall of 2011. There were no construction activities of GIPTP during this period.	Abasha-Senaki: OGCT is using about 50 people on average. Kutaisi-Abasha: It is expected that the selected vendor will use about 60 people on average. GIPTP: No persons 45 persons GSE (36 men and 9 women)

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator PE11: Extent of contributions performed by counterparts GSE and GOGC (e.g., for each activity in the work plan, the number of activities and % of effort where GSE and GOGC are able to lead with limited oversight)		85% of activities related to planning, permission gaining, procurement and supervision over implementation had been conducted by GOGC. The PGIP team undertook capacity building efforts, for successful implementation of the current projects, as well for establishing sustainable functions in the future. This will enable GOGC independently to carry similar activities. The PGIP team had provided advisory support and guidance during the entire project implementation as well. The PGIP team impute was estimated to be 15%. GSE had supported the PGIP Project staff in data acquisition and analyses. The PGIP team started detailed design of the works, preparation of tender documentation, preparation and clearance of health, safety, environmental documentations, procedures and plans. Fulfillment of named tasks was carried with GSE facilitation. Estimated contribution of PGIP in the energy project was 90%. GSE contribution 10%.	GOGC did all of the design of the Senaki-Poti gas pipeline, acquisition of the right of way, and supervision of the contractor.	GOGC did all of the design of the Abasha-Senaki gas pipeline and the Kutaisi-Abasha gas pipeline, acquisition of the right of way, and supervision of the contractor. GSE prepared and submitted the environmental report for the GIPTP to the government of Georgia. GSE acquired the right of way for the GIPTP line. GSE prepared and submitted the application for the Construction Permit for GIPTP. GSE provided technical contributions to the tender documents for the Dissolved Gas Analyzer Project and the Enhanced Emergency Control System Project.	GOGC will continue to supervise the construction contractor for the Abasha-Senaki gas pipe line, and for the Kutaisi-Abasha gas pipeline if construction starts before September 30, 2012. GSE will continue the work to acquire the right of way; GSE will apply to the Government of Georgia for a revision of the Construction Permit. GSE personnel will participate in the evaluation of bids for the Dissolved Gas Analyzer Project and the Enhanced Emergency Control System Project.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
5.2 Component 1 Electric: Activity / Task Level Indicators (Custom Indicators - Outcomes*)*					
5.2.1 **Task 1A: Reconstruction and Construction Subcomponent – Reconstruct the Twin Chain Senaki 220 kV Transmission Line**					
Indicator 1.1: Number of circuit kilometers constructed	Zero; start of the project.	Zero; design work underway.	Zero; design work underway.	Zero; tendering is underway.	59 KM to be completed by fall of 2013
Indicator 1.2: Amount of electricity carried through new transmission line (measured in MWH)	Zero; start of the project.	Zero; design work underway.	Zero; design work underway.	Zero; tendering is underway.	By the summer of 2013 (estimate) the line will be part of transmission scheme for ensuring following load regimes: Apkhazia 140 MWH Adchara-Guria 65 MWH Samegrelo-Zemo Svaneti 58 MWH. The PIZ of Poti 105 MWH Export to Turkey: from 150 to 350 MWH per hour

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator 1.3: Amount of investment gained, or made by GSE itself, to expand network to Khorga (a.k.a. Mukhuri) Substation		GSE has reviewed the existing options how to ensure in 3-4 years period 125 – 130 MWH supply to the Poti FIZ and surrounding areas. Based on existing decision, following approach will be chosen:	Substation Khorga" 220/110/11 KWh with 2X125 MWH/hour transformers will be constructed. Approximate price of the project is 9 million USD. GSE has submitted request to GOG for project financing, it was approved. The detailed project is already developed and GSE is planning to announce design and implementation tender after source of financing is identified.	Substation Khorga" 220/110/11 KWh with 2X125 MWH/hour transformers will be constructed. Approximate price of the project is 9 million USD. GSE has submitted request to GOG for project financing, it was approved. The detailed project is already developed and GSE is planning to announce design and implementation tender after source of financing is identified.	Substation ,Khorga" project will continue and be completed.
5.2.2 **Task 1B: System Monitoring of GSE Transmission Network Assets**					
Indicator 1.4: Number of GSE owned high voltage transformers failing and being forced out of service	Zero. No GSE owned HV transformers failed in this time period.	Zero. No GSE owned HV transformers failed in this time period.	Zero. No GSE owned HV transformers failed in this time period.	Zero. No GSE owned HV transformers failed in this time period.	Zero

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator 1.5: Amount of emergency maintenance funds spent *due to unplanned transformer failures*	Zero. No GSE owned HV transformers failed in this time period.	Zero. No GSE owned HV transformers failed in this time period.	Zero. No GSE owned HV transformers failed in this time period.	Zero. No GSE owned HV transformers failed in this time period.	Zero
Indicator 1.6: Number of customers affected by backbone transmission disruption and transformer failures (by category of customer and type of failure)		There were partial blackouts of the transmission system in July and August 2010 due to the emergency outages of the 500 kV Imereti line and the 500 kV Kartli-2 power transmission line. (GSE Annual Report for 2010, page 44.)	There were partial blackouts of the transmission system in July 2011 due to the emergency outages of the 500 kV Imereti line and the 500 kV Kartli-2 power transmission line. (GSE Annual Report for 2011, page 38.)	There were no system outages in this time period.	Zero

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
5.2.3 **Task 1C: Smart Grid Implementation for a segment of the GSE Network**					
Indicator 1.7: Percentage of transmission system operating under modern computerized (automated) control systems				All 37 Substations (19 in GSE's possession) are equipped with SCADA system. These transformers are controlling 100% of energy flow in the country (220 kV and above)	Additional transformer condition diagnosis equipment and relay protections systems will be added to all substations, including the USAID funded Enhanced Emergency Control System.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
5.3 Component 2 Gas: Activity / Task Level Indicators *(*Custom Indicators - Outcomes*)*					
5.3.1 **Task 2A: Senaki - Poti Natural Gas Pipeline Extension**					
Indicator 2.1: Number of kilometers of pipeline constructed	None	Pipeline length is 30 kilometers from Senaki to Poti. It was to be completed and became operational for December 31; 2010 27,204 meters of pipeline will have DN700 (711.2 mm diameter) and 10 mm (wall thickness) 305 meters of 711.2 mm (diameter) and 12 mm (wall thickness) 2,740 meters of 711.2 mm (diameter) and 14 mm (wall thickness)	Under construction.	The Senaki-Poti gas pipeline became operational in the fall of CY 2011	Not applicable, since Senaki-Poti gas pipeline became operational in the fall of CY 2011

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator 2.2: Increase in delivery capacity for natural gas (e.g., how much additional natural gas can be delivered based on design pressures)	None.	None.	None.	At this time the operating pressure is not permitted to exceed 12 Bars. At this pressure the delivery is 6.1 million normal cubic meters per day. This is a new pipeline and a new source of fuel, so the increased capacity will be 6.1 million normal cubic meters per day.	
Indicator 2.3: *Actual* delivery of natural gas through the newly built and rehabilitated pipeline system (million normal cubic meters per day)	None.	None.	None	SOCAR Poti reports 61,300 normal cubic meters delivered for the six month time period ending March 31, 2012.	Senaki - Poti pipeline is operational and its capacity is 6.1 million normal cubic meters per day[*].

[*] Reference "Project for Construction of Senaki-Poti Section of the Magistral Gas Pipeline "GOGC-09-III-GP07-0000; Appendix 3.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
5.3.2 **Task 2B: Abasha - Senaki Pipeline Replacement**					
Indicator 2.4: Number of kilometers of pipeline *replaced* (for *entire* GOGC system)	None	None	None. (The Senaki-Poti, gas pipeline of Section 5.3.1 above is a new line and did not replace an existing line.)	None. (The new Abasha-Senaki gas pipeline will parallel the existing East-West gas pipeline. The existing East-West pipeline will remain in service as a gas sub-transmission gas pipeline.)	None. (The new Abasha-Senaki gas pipeline will parallel the existing East-West gas pipeline. The existing East-West pipeline will remain in service as a gas sub-transmission gas pipeline.)
Indicator 2.5: *Increase* in delivery capacity for natural gas (e.g., how much additional natural gas can be delivered based on design pressures) (million normal cubic meters per day)	None	None	None	None. Construction of this gas pipeline only started in June 2012.	The operating pressure is not permitted to exceed 54 bar. At this pressure, the delivery will be 7.5 million normal cubic meters per day. The usage in the past was 1.37 million normal cubic meters per day. If the existing pipeline remains in service, the *increased* capacity will be 7.5 million normal cubic meters per day.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator 2.6: *Actual* delivery of natural gas through the newly built and rehabilitated pipeline system (million normal cubic meters per day)	Existing pipeline is carrying 500 million normal cubic meters per year of natural gas, which is the current customer consumption.	Existing pipeline is carrying 500 million normal cubic meters per year of natural gas, which is the current customer consumption.	Existing pipeline is carrying 500 million normal cubic meters per year of natural gas, which is the current customer consumption.	Existing pipeline is carrying 500 million normal cubic meters per year of natural gas, which is the current customer consumption.	Subject to customer demand the delivery could be up to 7.5 million normal cubic meters per day at 54 bar. However, at the current operating pressure of 12 bar the capacity is 6.1 million normal cubic meters per day. The usage of the existing pipeline was 1.37 million normal cubic meters per day). Assuming both pipelines are operated together, the actual delivery on the newly built and the existing gas pipelines will be 7.47 million normal cubic meters per day (= 6.10 + 1.37)

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
5.3.3 **Task 2C: Kutaisi - Abasha Pipeline Rehabilitation**					
Indicator 2.7: Number of kilometers of pipeline *rehabilitated* (for *entire* GOGC system)	None	None	None	None. (The new Kutaisi-Abasha gas pipeline will parallel the existing East-West gas pipeline. The existing East-West pipeline will remain in service as a gas sub-transmission gas pipeline.)	None. (The new Kutaisi-Abasha gas pipeline will parallel the existing East-West gas pipeline. The existing East-West pipeline will remain in service as a gas sub-transmission gas pipeline.)
Indicator 2.8: *Increase* in delivery capacity for natural gas (e.g., how much additional natural gas can be delivered based on design pressures) (million normal cubic meters per day)	None	None	None	None. Construction of this gas pipeline is not expected to being until the fall of 2012.	The operating pressure is not permitted to exceed 54 bar. At this pressure *at the sending end* the delivery will be 7.5 million normal cubic meters per day. The usage in the past was 1.37 million normal cubic meters per day. If the existing pipeline remains in service, the *increased* capacity will be 7.5 million normal cubic meters per day.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator 2.9: *Actual* delivery of natural gas through the newly built and rehabilitated pipeline system (million cubic meters per day)	None, since the line is not in service yet	None, since the line is not in service yet	None, since the line is not in service yet	None, since the line is not in service yet.	Subject to customer demand the delivery could be up to 7.5 million normal cubic meters per day at 54 bar. However, at the current operating pressure of 12 bar the capacity is 6.1 million normal cubic meters per day. The usage of the existing pipeline was 1.37 million normal cubic meters per day). Assuming both pipelines are operated together, the actual delivery on the newly built and the existing gas pipelines will be 7.47 million normal cubic meters per day (= 6.10 + 1.37)

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
5.4 Capacity Building and Management Improvements: Activity / Task Level Indicators (Custom Indicators - Outcomes)					
5.4.1 **Task 3A: GSE Capacity Building and Management Improvement**					
Indicator 3.1: Percent of work effort for network construction and expansion GSE staff are able to perform in-house, with only minor oversight and guidance	GSE reports that they have the capability to do minor construction up to 220 kV; GSE says it does not have the in-house staff and equipment to construct major 220 kV (for example, GIPTP) and 500 kV (for example, Akhaltsikhe-Gardabani) transmission lines.	GSE reports that they have the capability to do minor construction up to 220 kV; GSE says it does not have the in-house staff and equipment to construct major 220 kV (for example, GIPTP) and 500 kV (for example, Akhaltsikhe-Gardabani) transmission lines.	GSE reports that they have the capability to do minor construction up to 220 kV; GSE says it does not have the in-house staff and equipment to construct major 220 kV (for example, GIPTP) and 500 kV (for example, Akhaltsikhe-Gardabani) transmission lines.	GSE reports that they have the capability to do minor construction up to 220 kV; GSE says it does not have the in-house staff and equipment to construct major 220 kV (for example, GIPTP) and 500 kV (for example, Akhaltsikhe-Gardabani) transmission lines.	GSE reports that they have the capability to do minor construction up to 220 kV; GSE says it does not have the in-house staff and equipment to construct major 220 kV (for example, GIPTP) and 500 kV (for example, Akhaltsikhe-Gardabani) transmission lines.
Indicator 3.2: Number of GSE staff trained by program (including gender and age)	Zero; there was no program training in this fiscal year.	Zero; there was no program training in this fiscal year.	Zero; there was no program training in this fiscal year.	Fifteen total; 12 men and 3 women as part of the CAPE software project of PGIP.	DGA Project: up to ten people. GSE is responsible for travel expenses. EECS Project (up to 33 people). GSE is responsible for travel expenses.
Indicator 3.3: Number of lost time accidents in the GSE organization	Zero	1	2	Zero	Zero

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator 3.4: Number of loss time accidents in contractor organizations	Not available; GSE does not track this statistic.	Not available; GSE does not track this statistic.	Not available; GSE does not track this statistic.	Not available; GSE does not track this statistic.	Zero
5.4.2 **Task 3B: GOGC Capacity Building and Management Improvement**					
Indicator 3.5: Percent of work effort for network rehabilitation and construction able to be performed in house, with only minor oversight and guidance	GOGC and GGTC are staffed and equipment to do maintenance of existing gas pipelines and construction of up to 15 km length of DN700 pipeline. Longer sections of new gas pipelines are done by subcontractors.	GOGC and GGTC are staffed and equipment to do maintenance of existing gas pipelines and construction of up to 15 km length of DN700 pipeline. Longer sections of new gas pipelines are done by subcontractors.	GOGC and GGTC are staffed and equipment to do maintenance of existing gas pipelines and construction of up to 15 km length of DN700 pipeline. Longer sections of new gas pipelines are done by subcontractors.	GOGC and GGTC are staffed and equipment to do maintenance of existing gas pipelines and construction of up to 15 km length of DN700 pipeline. Longer sections of new gas pipelines are done by subcontractors.	GOGC and GGTC are staffed and equipment to do maintenance of existing gas pipelines and construction of up to 15 km length of DN700 pipeline. Longer sections of new gas pipelines are done by subcontractors.
Indicator 3.6: Number of GOGC staff trained by program (including gender and age)	Zero; there was no program training in this fiscal year.	Zero; there was no program training in this fiscal year.	Zero; there was no program training in this fiscal year.	Pipeline Integrity Management Workshop; 14 people total, 13 men and 1 woman.	Depends upon the bids submitted by the construction subcontractors.

Performance Indicators	Baseline (Year Ending 10/01/2009)	Results (09/30/2010)	Results (09/30/2011)	Results (03/31/2012)	Target (09/30/2012)
Indicator 3.7: Number of lost time accidents in the GOGC organization	Zero	Zero	Zero	Zero	Zero
Indicator 3.8: Number of lost time accidents in contractor organizations	Zero	Zero	Zero	Zero	Zero

6 Annex 1 Gas Distribution Customers by Month

This Annex contains table that indicates the number of customers of the gas distribution companies along the route of the PGIP gas pipeline work (Samtredia, Abasha, Senaki and Poti). The tables of this Annex are associated with Indicator PE6.

These tables were added to this PMP in August 2012.

6.1 Poti

Nr.	Date	Customers connected (residential)	Customers connected (commercial, industrial and government)	Customers that Could Connect if they Wanted to be Connected (See Note 1 below)	Volume of Gas Delivered (normal cubic meters)	Source of the Numbers
1	October 1, 2012				61300 m^3 for the six month period October 1, 2011 through March 31, 2012.	
2	November 1, 2012					
3	December 1, 2011	121				SOCAR
4	January 1, 2012	121				GOGC
5	February 1, 2012	121				USAID
6	March 1, 2012	130				SOCAR
7	April 1, 2012	130				SOCAR
8	May 1, 2012	1133	2			SOCAR
9	June 1, 2012	1230	4	8000		SOCAR
10	July 1, 2012	1242	5	8000		SOCAR
11	August 1, 2012	1258	5	8000		SOCAR
12	September 1, 2012					
13	October 1, 2012					
14	November 1, 2012					

Notes:

1. These are customers that could be connected because the gas pipe has been installed in front of their house or business.
2. This gas distribution company operated by SOCAR.

6.2 Senaki

Nr.	Dates of Customer Counts	Customers connected (residential)	Customers connected (commercial, industrial and government)	Customers that Could Connect if they Wanted to be Connected (See Note 1 below)	Volume of Gas Delivered (normal cubic meters)	Source of the Numbers
1	October 1, 2012				1,800,000 m^3 for the six month period October 1, 2011 through March 31, 2012. See Note 3.	
2	November 1, 2012					
3	December 1, 2011					
4	January 1, 2012					
5	February 1, 2012					
6	March 1, 2012					
7	April 1, 2012					
8	May 1, 2012					
9	June 1, 2012					
10	July 1, 2012					
11	August 1, 2012	2,200	(included in number at left)			Senaki gas distribution company
12	September 1, 2012					
13	October 1, 2012					
14	November 1, 2012					

Notes:

1. These are customers that could be connected because the gas pipe has been installed in front of their house or business.
2. This gas distribution company is owned and operated by Mr. Gigi Qoiava.
3. It is reported that the 'cubic meters per customer per six month period' is higher than the similar averages for Poti, Abasha and Samtredia because of the asphalt plant and the military base in Senaki.

6.3 Abasha

Nr.	Date	Customers connected (residential)	Customers connected (commercial, industrial and government)	Customers that Could Connect if they Wanted to be Connected (See Note 1 below)	Volume of Gas Delivered (normal cubic meters)	Source of the Numbers
1	October 1, 2011				250,000 m^3 for the six month period October 1, 2011 through March 31, 2012.	
2	November 1, 2011					
3	December 1, 2011					
4	January 1, 2012	539	27			SOCAR
5	February 1, 2012	543	27			SOCAR
6	March 1, 2012	553	27			SOCAR
7	April 1, 2012	558	29			SOCAR
8	May 1, 2012	565	30			SOCAR
9	June 1, 2012	571	30			SOCAR
10	July 1, 2012	588	30			SOCAR
11	August 1, 2012	600	30	2500		SOCAR
12	September 1, 2012					
13	October 1, 2012					
14	November 1, 2012					

Notes:

1. These are customers that could be connected because the gas pipe has been installed in front of their house or business.
2. This gas distribution company operated by SOCAR.

6.4 Samtredia

Nr.	Date	Customers connected (residential)	Customers connected (commercial, industrial and government)	Customers that Could Connect if they Wanted to be Connected (See Note 1 below)	Volume of Gas Delivered (normal cubic meters)	Source of the Numbers
1	October 1, 2012				4,525,000 m^3 for the six month period October 1, 2011 through March 31, 2012.	
2	November 1, 2012					
3	December 1, 2011					
4	January 1, 2012					
5	February 1, 2012					
6	March 1, 2012					
7	April 1, 2012					
8	May 1, 2012					
9	June 1, 2012					
10	July 1, 2012					
11	August 1, 2012	10,046	254	2,000		Itera
12	September 1, 2012					
13	October 1, 2012					
14	November 1, 2012					

Notes:

1. These are customers that could be connected because the gas pipe has been installed in front of their house or business.
2. This gas distribution company operated by Itera in Samtredia. We are told that SOCAR is installing gas pipelines and serving customers around but outside of Samtredia; the numbers above do not include the numbers for SOCAR around Samtredia.

The Georgia Power and Gas Infrastructure Project (PGIP) provides in-country professional engineering and other technical services to support power and gas transmission improvements being undertaken by USAID on behalf of the Government of Georgia. The activities performed under PGIP complement and reinforce the activities, project management, and engineering expertise of USAID/Caucasus.

PGIP is being implemented from 2010 to 2013 in collaboration with the Georgian Oil and Gas Company (GOGC) and the Georgia State Electrosystem (GSE) to upgrade, replace, and install critical selected gas and power transmission infrastructure. These companies are state-owned entities charged with the import and transit, and in the case of GSE, dispatch of electricity throughout the country.

PGIP's activities support USAID's objective of promoting energy security through greater access to electricity and natural gas supplies households in Western Georgia, promoting the development of the Poti Free Industrial Zone (FIZ) on the Black Sea, and securing power exports through in-country reliability-related infrastructure improvements. The activities are managed by Tetra Tech and support USAID's objective of fostering sustainable development.

The PGIP project includes the following infrastructure projects:

- Construction of a new 31 kilometer, 700 mm gas pipeline from Senaki to Poti and to the Poti FIZ
- Construction of a new 76 kilometer, 700 mm gas pipeline from Kutaisi to Senaki
- Replacement of 58 kilometers of 220 kV transmission lines (referred to as Senaki I and II), which were dismantled in 1992 during Georgia's civil war
- Restoration of the power substations in Tskaltubo and Menji to support the Senaki I and II 220 kV transmission lines.

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21 Aug 2012 v15